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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,525	05/10/2001	Romain Desplats	BE-9197	5660
466	7590	01/29/2004	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			BRITT, CYNTHIA H	
			ART UNIT	PAPER NUMBER
			2133	
DATE MAILED: 01/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/831,525	DESPLATS ET AL.
Examiner	Art Unit	
Cynthia Britt	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-35 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-35 is/are rejected.
- 7) Claim(s) 1-35 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 May 2001 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4&amp;5</u> .	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

Claims 1-35 have been presented for examination.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on May 10, 2001 (paper 4) and on July 27, 2001 (paper 5) have been considered by the examiner.

***Drawings***

The drawings are objected to because descriptive labels other than numerical are needed for figures 1-3, 5, 8, 9, 10a-c, 11a-b, 12a-b, 13, and 14. See 37 CFR 1.84(o). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities:

The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Objections***

The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim 31 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim 31 has not been further treated on the merits.

Claims 1, 6,7,14-26, and 33-35 are objected to because of the following informalities: The reference characters from the drawings in the claims have no effect on the scope of the claims and carry no patentable weight. "Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed in parentheses so as to avoid confusion with other numbers or characters, which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims." MPEP 608.01(m)

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, a method is claimed in which the applicant does not clearly articulate the relationship or order of the steps necessary to achieve the claimed result. The order of the steps would seem to be necessarily preformed in a specific order to comply with the specification (figure 3 and page 22).

Claims 2-32 are dependent on claim 1 and inherit the 35 U.S.C. 112, second paragraph issues or the independent claim.

As per claims 33-35, where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term “installation” in claims 33-35 is used by the claim to mean “apparatus or system”, while the accepted meaning is “to put something in place.” The term is indefinite because the specification does not clearly redefine the term.

Claims 1-35 if acceptably amended to overcome the 35 U.S.C. 112, second paragraph rejections stated above, without changing the scope of the claims, would be allowable over the prior arts of record.

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

The present invention pertains to a system and method for locating a fault in an integrated circuit. The integrated circuit is connected with a tester, which applies test vectors to the circuit under test, and measures the current consumption at rest IDDQ, to detect short circuit faults. Furthermore, the integrated circuit is placed in potential contrast: electron microscopy imaging system, detecting secondary electrons that produce a set of vector images representing equipotential lines created by the circuit tracks and logic gates. A sequence of location vectors is generated on the basis of the previously formed sequence of test vectors. Each test vector for which the binary signal of at least one input terminal is capable of changing logical state is broken down into a plurality of location vectors, the binary signals of which do not change logical state. The location vectors are applied to the input terminals step by step. The value IDDQ is measured for each vector, and it is determined whether that value is normal. The location vectors for which the value IDDQ is abnormal are applied next, followed by a set of images of the circuit potential in which contrast is produced. Finally, by comparing the abnormal vector images with prerecorded reference images, the malfunctioning logic gate is located in the integrated circuit.

The prior arts of record (U.S. Patent No. 5,790,565 Sakaguchi being the closest example of prior art) disclose a test system for an integrated circuit, which uses a combination of a functional test with a current consumption test at rest IDDQ. It is clear

that this test configuration is different from the one used in the present invention. However, none of the prior art of record, taken either alone or in combination discloses the IDDQ test in combination with potential contrast electron microscopy imaging system. As such, modification of the prior arts of record can only be motivated by hindsight reasoning, or by changing the intended use and function of the prior arts themselves. As such, it is not clear that one of ordinary skill in the art at the time of the invention would have made the necessary modifications to the prior art of record to encompass the limitations set forth in the independent claims 1 and 33.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

## **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,790,565 Sakaguchi

This patent teaches a failure diagnosis apparatus which predicts failure locations in a CMOS integrated circuit in which an IDDQ has been discovered, this apparatus having a test pattern storage unit for storing test patterns used to perform a functional test of the CMOS integrated circuit, an LSI tester which performs a functional test and an IDDQ test on the CMOS integrated circuit based on the test patterns, a test results storage unit to store test results, a circuit data storage unit to store various information

with regard to the device under test, a logic simulator for receiving the above-noted test patterns and circuit data and performing a logic simulation of the internal operation of the circuit, a simulation results storage unit, and a failure location judgment unit for outputting the diagnosis results based on test results and simulation results. This diagnosis apparatus predicts short circuit failures between signal lines and between a signal line and either a power supply line or a ground line, based, on the results of a simulation of internal circuit signal values at a point in time at which a test pattern is applied for which an abnormality is not detected in an IDDQ test.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 703-308-2391. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cynthia Britt  
Examiner  
Art Unit 2133

CHB

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*Guy J. Lamare*  
for

Albert DeCady  
Primary Examiner